

### In the Claims

The claims have been amended as follows:

- 1     1.     (Currently Amended~~original~~) A photomask material comprising:
  - 2           a mask blank in the form of a transparent substrate;
  - 3           an opaque layer directly over and contacting the transparent substrate;
  - 4           a metal layer directly over and contacting the opaque layer;
  - 5           a resist layer directly over and contacting the metal layer having a thickness
  - 6           ranging from about 1000 Å to about 2000 Å to provide for improved achievable
  - 7           minimum resolution on the photomask.
  
- 1     2.     (original) The photomask material of claim 1 wherein the transparent
  - 2           substrate is made of a material selected from the group consisting quartz, glass,
  - 3           silica glass, polysilicate glass, soda glass, and thin membrane materials made of
  - 4           silicon, SiN, SiC and diamond.
  
- 1     3.     (Currently Amended~~original~~) The photomask material of claim ~~1~~2 wherein
  - 2           the opaque layer comprises a chrome-based material selected from the group
  - 3           consisting of chrome and Cr:O:N.

1 4. (Currently Amended~~original~~) The photomask material of claim ~~4~~3 wherein  
2 the metal layer comprises a material selected from the group consisting of  
3 tungsten, tungsten-silicon, tantalum, and tantalum-silicon, ~~and copper~~.

1 5. (Currently Amended~~original~~) The photomask material of claim 4 wherein  
2 the metal layer has a thickness ranging from about 20 Å to about 600~~100~~ Å.

1 6. (Cancel.)

1 7. (Cancel.)

1 8. (Currently Amended~~original~~) A photomask material comprising:  
2 a transparent glass substrate;  
3 a chrome-based layer directly over and contacting the transparent glass  
4 substrate;  
5 a copper metal layer ~~comprising a material selected from the group consisting~~  
6 ~~of tungsten, tungsten-silicon, tantalum, tantalum-silicon, and copper~~ directly  
7 over and contacting the chrome-based layer; and  
8 a resist layer directly over and contacting the copper metal layer.

1 9. (original) The photomask material of claim 8 wherein the chrome-based  
2 layer comprises a material selected from the group consisting of chrome and  
3 Cr:O:N deposited to a thickness ranging from about 700 Å to about 1200 Å.

1 10. (Cancel.)

1 11. (Currently Amended~~original~~) The photomask material of claim 9 wherein  
2 the copper ~~metal~~ layer ~~comprising a material selected from the group consisting of~~  
3 ~~tungsten, tungsten-silicon, tantalum, tantalum-silicon, and copper~~ and is deposited  
4 to a thickness ranging from about 100 Å to about 600 Å.

1 12. (Currently Amended~~original~~) The photomask material of claim 11~~9~~  
2 wherein the resist layer has a thickness ranging from about 1000 Å to about 2000  
3 Å to provide for improved achievable minimum resolution on the photomask.

1 13. (Currently Amended~~original~~) A method of manufacturing a photomask  
2 comprising:  
3 providing a transparent substrate;  
4 depositing an opaque layer directly over and contacting the transparent  
5 substrate;  
6 depositing a metal layer directly over and contacting the opaque layer to a  
7 thickness ranging from about 20 Å to about 600 Å;

8        ~~depositing or coating~~ a resist layer over the metal layer having a thickness ranging  
9        from about 1000 Å to about 2000 Å ;  
10       imaging the resist layer to form a resist mask pattern thereby exposing portions  
11       of the metal layer;  
12       etching the exposed portions of the metal layer using a first etchant that etches  
13       the metal layer faster than the underlying opaque layer to create a metal  
14       layer image; and  
15       transferring the metal layer image into underlying exposed portions of the  
16       opaque layer using a second etchant that etches the opaque layer faster  
17       than the metal layer to form a photomask in the opaque layer, whereby the  
18       thickness of the resist layer provides for improved achievable minimum  
19       resolution, image quality and critical dimension uniformity of the  
20       photomask.

1       14. (original) The method of claim 13 further comprising after transferring the  
2       metal layer image into the underlying opaque layer, removing any remaining metal  
3       layer.

1       15. (original) The method of claim 13 wherein the opaque layer comprises a  
2       chrome-based material selected from the group consisting of chrome and Cr:O:N  
3       deposited to a thickness ranging from about 700 Å to about 1200 Å.

1 16. (Currently Amended~~original~~) The method of claim 13 wherein the metal  
2 layer comprises a material selected from the group consisting of ~~tungsten,~~  
3 ~~tungsten-silicon,~~ tantalum, tantalum-silicon, and copper ~~deposited to a thickness~~  
4 ~~ranging from about 100Å to about 600Å.~~

1 17. (Cancel.)

1 18. (Cancel.)

1 19. (Cancel.)

1 20. (original) The method of claim 13 wherein the step of etching exposed  
2 portions of the metal layer to form the hard mask image comprises etching the  
3 metal layer using an etchant which is highly selective to the metal layer whereby  
4 the etchant removes only the metal layer and leaves the underlying opaque layer  
5 intact.

Please add new claims 21-24 as follows:

1 21. (New.) The photomask material of claim 5 further including an adhesion  
2 promoting layer between the metal layer and the resist layer.

1 22. (New.) The photomask material of claim 21 wherein the adhesion  
2 promoting layer comprises Hexa-methyl-disilizane.

1 23. (New.) The photomask material of claim 8 further including an adhesion  
2 promoting layer between the metal layer and the resist layer.

1 24. (New.) The method of claim 13 further including depositing an adhesion  
2 promoting layer between the metal layer and the resist layer.